

"If war were declared to-morrow, what would we do for aircraft?"

# AVIATION

APRIL 23, 1923

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XIV

## SPECIAL FEATURES

Number  
17

THE DORNIER "WAL" FLYING BOAT  
N.A.A. STARTS MEMBERSHIP CAMPAIGN  
LIEUT. L. J. MAITLAND MAKES NEW SPEED RECORD  
LIGHTNING PROTECTOR FOR BALLOONS AND AIRSHIPS

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## CONTENTS

Editorials	431	Purs to Belgrade Air Service	445
Membership Companies of the N.A.A.	442	American Express Duration and Distance Records	449
Least L. J. Mulhead Makes New World Speed Record	445	New Wind Tunnel at McCook Field	459
The Douglas "Wild" Twin Engine Flying Boat	441	British Air Activities	459
U. S. Airport Facilities	445	British Airways Roll	460
Frenchman Chast Air Defenses	446	New Air Conventions	459
Lightness Evincement for Ballons and Airships	446	L.P.G. "Palace"	451
Wilson's Balkan Base	447	Setting Flight Post	451
New British Air Line Proposals	447	Aero. Map Society, M.T.	451
Advances in Space	447	Dutchman's Motion Case	451
Deployment and Expedition of Pilot Ballons	448	New from Amsterdam	451
A. Bonavent's Power Plant	448	Army and Navy Air News	452

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MANAGING EDITOR

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# AVIATION

LAMAR HENRY  
EDITOR  
VICTOR E. CLARK  
EDITORIAL ASSISTANT  
EDWARD P. WATSON  
EDITORIAL ASSISTANT  
HARRY H. HARRIS  
CONTRACTING EDITOR

### The Dayton Wright Company

**A**SSOCIATION has been made that the Dayton Wright Company will discontinue all aircraft work about July first. The retirement of the company from the aviation field is more important than would appear on the surface. Two facts are apparent.

One is that it indicates that the General Motors Corporation with which the Dayton Wright Company is allied has decided that under existing conditions there is no longer enough work a field that is inviting. This is itself might be due to special conditions, but it is generally known that the huge interests established with these companies have become disheartened with the present plan of government purchasing of aircraft and they quit rather than go on and become General Motors of any product that is developed in the industry. These companies know how the government buys automobiles. If it wants Cadillac or Duesenberg it buys them from these companies at the current price. It does not give out specifications of these cars and ask for bids from other automobile manufacturers.

The Dayton Wright Company has developed a business plan that is calculated to embody some of the most remarkable qualities of any ship of this type. The firm has maintained a high class engineering department and it has been willing to invest money in the prospect of securing adequate orders. These have been inadequate to interest the company to continue in aircraft work.

The other fact that would be faced by the aircraft industry is that General Motors will not become available for aircraft work until there is some possible demonstration in this country of commercial transport other than short haul passenger carrying. Ever since the war various schemes have been put forward for commercial air service and much time has been expended in it. What is needed is an extensive demonstration of public air transport operating on a schedule with guaranteed maintenance of results established.

The Dayton Wright Co. did not want to continue to do business with the so-called "war customer", the government. The "war customer" also was long ago shown to be an error. An aircraft manufacturer has not only to "sell" one purchasing officer, but he has to interest, sell and maintain his prestige with thousands of officers and related men of the Army and Navy, those connected with aviation in other departments, and then help in every way possible to represent the Government in the service, for the fact is the branch of our national defense. A business where the public have been shown to be pessimistic and where the number of people that must be kept interested is so large will not attract capital,

for it will naturally seek less difficult fields of investment. From the personal standpoint the interesting will be suggested by all in the industry. The personnel of the Dayton Wright Company has been of the type that suggestion and news is all efforts to uplift the industry. They will be greatly missed.

### Four Miles a Minute

**F**OUR miles a minute, the rate of speed at which Lord T. J. Mottishaw traveled through the air when he established a new world's maximum speed record at Wilbur Wright Field, on March 25, at a speed difficult to visualize for those who have not witnessed some of the high speed flying done since the last Pulitzer Trophy race. Attention observers at that great event were aware that there was a marked difference between the airplanes which turned the legs around 200 m.p.h. and those which were some twenty miles slower. For some unaccountable reason there was no mistaking these two speeds at 100 m.p.h. an airplane still gave the impression that it was flying, but at 200 m.p.h. there was something propulsive-like in the appearance of these ships which clearly distinguished them from the rest, even from a certain distance. The addition of 80 miles to the speed of each ship still further enhanced the impression that they have been shot out of a mortar gun, or rocket.

In view of the extraordinary increase in speed which has been obtained in the last six months without requiring any kind of alteration of the Army Cadet series, it seems likely that such higher speeds will be attained at the forthcoming Pulitzer Trophy Race where machines embodying the latest experience in racing design will compete against one another. It would be idle to speculate what maximum speed may reasonably be expected, for in a race the final result depends on the sum of several qualities, personnel, mechanical, man-made, etc. which it is humanly impossible to foresee. The maximum fact is that racing airplanes are being in the general direction of a five-and-a-half-minute plane, and this despite the fact that only a few years ago an airplane (recently described mathematically) proved that no airplane would ever exceed a speed of 200 m.p.h. A priori, there does not seem to be any theoretical limit to the speed of airplanes. It is merely a question of converting the biggest engine with the smallest weight through the agency of a perfect classification factor, which implies a retrograde-looking gear. The practical difficulty arises, however, from the question of safe landing speed. As the high speed goes up, so does the landing speed. To keep the latter down to a safe figure is perhaps the greatest problem in racing airplane design.

"If our were declared to increase what would be the for aircraft?"



<sup>a</sup>"If war were declared to-morrow what would we do for survival?"

## Lightning Protector for Balloons and Airships

Lighter-than-Air Craft Safeguarded Against Static Electricity by Remarkable Invention

By S. B. Winter

When explorations are made above the surface of the earth observation balloons have heretofore been more or less at the mercy of static electricity. In consequence, not infrequently have these explorations been abruptly terminated with the failure of the balloons taking fire.

Since, thanks to the sensitive need of a Civilian, maintenance of the Pacific Division of the Bureau of Engineering, Navy Department, a device has been perfected for using guarding like balloons and umbrellas against static electricity. Clouds laden with dust and moisture accumulate a charge of electricity, the strength of which is influenced by several factors—the distance traveled by the cloud, its speed, its height above the surface of the earth, and whether or not a solution of clouds invites the taking on of an additional charge of electricity. The latter condition assumes that the rubbing of clouds against the accumulation of electricity, in the event of a storm, is the cause of lightning. The polarization of electricity is robbed of some of its power.

### Now the Problem can Solve

[illegible]

With the opinion of the lightning shield, a discharge of electricity from the sky to the earth by the way of the lightning rods is possible. The lightning rods are made of metal, and are connected to the ground by metal pipes. The belt of lightning, however, will be converted into the conductor in the form of an insulator. This is the electrical resistance of the lightning current of earth. The lightning current is a very high current, and it is very difficult to dampen and very necessary measures must be taken to avoid it by lightning or break down. Any current that is not a lightning current, but a lightning current, for example, will have acted upon by brush or lightning (spark), which also involving current to be generated by the lightning current.

The frequency of the generated current is proportional to the inductance and capacity of the circuit, and the strength of the current is directly proportional to the inductance and capacity of the circuit. The frequency of the current is directly proportional to the inductance and capacity of the circuit, and the strength of the current is directly proportional to the inductance and capacity of the circuit. The frequency of the current is directly proportional to the inductance and capacity of the circuit, and the strength of the current is directly proportional to the inductance and capacity of the circuit.

The electrical element is located on the end of the balloon, making connection electrically with the steel electrode. Such a surrounding position for the electrode is in the interest of a removal of the exposed brining or sparking surface to a point where no gas or fibre interferes in the pathway of the steel and the tip of the conductor. Previous attempts to establish artificial guardians for hydrogen-air mixtures have been handicapped by the presence of the body of the spring which sits between the tip of the conductor (steel wire) and the moving sleeve. When the balloon was used, the sleeve was not in contact with the electrode, and the gas or contents by the fabric took free end, so consequently, escaped the mix.

[illegible]

The copper braid, leading from the switch, may be sheathed to a minimum inner pipe 1/2 in. long and 1/16 in. in diameter. The pipe should penetrate the soil to a depth of 3/16 in. Seal the ground connection with satisfactorily airproof any temporary seal. If permanent is to be devised, the inner pipe should be threaded for tight connection of a copper ribbon or brass wire. The wire should be buried under the soil to the same depth as the copper braid. The four conductors, each 15 ft. long, should be extended under soil to a depth of 3/16 in. This applies to moist earth, but if the soil is sandy the conductors should extend into the ground well past moist earth is topped. A strip of lead is either connected or attached to the gas valve of the furnace and then buried in the ground on the belly band. The metal parts of the furnace are buried in the ground on the belly band, thus ensuring a seal for the metal parts of the furnace and the *Apollonius* consists of a further

one which has a copper tip fastened to the tip of the former by two of copper wires. The tip is constructed so as to be pointed, having collected to it a string of hair which covers the tip to the level on the body of the hairline through a contact plate, wing out, and copper tag. Such an arrangement facilitates the coverage of the discharge from one place to another.

## Filed as Royal Assent

[illegible]

The inventor has applied for a patent by which he can safeguard his priority of discovery. Meanwhile, the Bureau of Aeronautics, Navy Department, has had the lightning arrester installed on eight balloons. Observation balloons employed by the Navy will in the future be likewise safeguarded by this novel device.

### National Balloon Race

The National Aeromarine Association announces that the entry of fourteen balloons in the National Balloon Race to be held in Indianapolis between June 9 and July 5 is assured. The balloons which finish first, second and third in the race will be the American entries in the international balloon race at Brussels, Belgium, Sept. 23, for the James Gordon Bennett trophy.

The American race will be held under the auspices of the N.A.A. and the Aero Club of Indianapolis, headed by the Indianapolis Chamber of Commerce which has guaranteed the contestants a sum of \$100,000. The Aero and Gray races probably be represented by four men and four women. Indianapolis has the entire race under the control of the N.A.A. Indianapolis will put up a prize of \$50,000 for division among the contestants. With favorable wind and weather it is confidently expected that the American endurance record of 3,777 miles for five balloons flight, held by Allan Hoxley of New York, will be broken in the forthcoming balloon race.

### New British Air Line Proposals

The British Air Ministry has just announced that it is prepared to receive proposals from responsible persons for the formation of an air transport company in its laws to be drafted by the Secretary of State for Air in the House of Commons on March 14, arising out of the recommendations of the Civil Air Transport Sub-committee. This report was published in the March 16 issue of *Aircraft*.

As the proposed company may have to start operations on April 1, 1954, it is desirable that it should come into existence at an early date. The Air Ministry, without imposing a specific time limit for action, desires to encourage that it hold itself at liberty to close with any offer which they regard as satisfactory by July 1, and in order that offers may receive full consideration it will be advisable that definite proposals should be made by May 1.

## Aviation in Spain

Barcelo Alfaro, correspondent in Spain of the Australasian Chamber of Commerce, writes that \$235,898 has been appropriated to subsidize the operations of the Spanish air mail service, \$1,500,000 has been appropriated for the army air service and \$1,701,000 for the navy air service. The Government within the next few months is expected to guarantee about \$11,000,000 for the complete establishment of the Pacific-Europe Airway airline line.



\*"Slip-plunging"—a *sic* quoted by Laurence Sperry, which consists in being tumbled on skis by a U. S. Mountaineering

*"If you were declared to-morrow what would you do for yourself?"*

















Trade Mark

## All in the Day's News

If you look at the Flying news in the papers for the past year you will be struck by a significant fact.

A high proportion of the most meritorious performances in the air are noted in the press to be those of Glenn L. Martin machines.

This is not to be wondered at when it is realized that since men first flew, and until 1916, army officers spent more hours in the air in Martin planes than in all other makes combined—and without a single serious accident.

Furthermore, army and navy

records to 1923 show that in all the thousands and thousands of miles flown by Glenn L. Martin planes only two accidents have occurred in which officers were killed—one being due to a plane caught in a storm in the mountains and the other to another plane colliding with a Bomber.

The records established by Glenn L. Martin airplanes for stability, endurance, weight-carrying capacity and economy of operation long since carried them to the front, and daily performance based on the quality built into the machines is keeping them there.

### THE GLENN L. MARTIN COMPANY

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